

MULTISCALE MODEL REDUCTION FOR ELASTICITY PROBLEM IN FRACTURED MEDIA

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In this work, we consider the elasticity problem in fractured media. For the efficient numerical solution, we present a Generalized Multiscale Finite Element Method (GMsFEM). GMsFEM is used for the construction of a coarse grid approximation of the problem by solution of the local spectral problems. We consider two types of the multiscale basis functions: (1) CG-GMsFEM with continuous multiscale basis functions and (2) DG-GMsFEM with discontinuous multiscale basis functions. The result of the numerical solution for the two-dimensional model problem is presented to show the performance of the presented multiscale method for fractured media. We compute error between the multiscale solution with the fine-scale solutions by choosing different numbers of multiscale basis functions.